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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,964	09/16/2003	Glenn M. Boles	Boles 3-4-30	2670

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EXAMINER

MERED, HABTE

ART UNIT	PAPER NUMBER
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2616

NOTIFICATION DATE	DELIVERY MODE
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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/663,964	Applicant(s) BOLES ET AL.	
	Examiner HABTE MERED	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 21-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 21-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The amendment filed on 1/29/2008 has been entered and fully considered.
2. Claims 1-14 and 21-26 are pending in the instant Application. Claims 1, 8, and 21 are the base independent claims.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1, 2, 5, and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bordogna et al (US 2005/0041695 A1) in view of Jackson (US 7, 218, 648 B1) Jackson.

5. Regarding **claim 1**, Bordogna'648 teaches a process for transmission of a message in a system, the process comprising the steps of sending, receiving, or propagating 1) more than one packet (**See Figure 2 showing a series packets with interpacket gaps**) and 2) an Interpacket gap (**Figure 2, elements 220-1...220-N**), the packet comprising a start-of-stream delimiter (**See Paragraph 23**), and a series of at least 16 message bytes encoded in symbols uninterrupted by a control symbol (**Since Bordogna's system is fully compliant to IEEE 802.3 standards as illustrated in paragraphs 1 and 4 and given that the Applicant has admitted any IEEE 802.3 compliant system uses to send data 16 symbols by default Bordogna's system meets the limitation**), and the Interpacket gap comprising a plurality of symbols

decoded as Idle symbols **(See Paragraphs 9 and 35 and Figure 6)** where an idle symbol is defined according to a packet transmission standard **(Bordogna'648's system is clearly based on Ethernet standards and in paragraph 23 clearly states the idle symbol is based on conventional Ethernet standard)**.

However, the above mentioned claimed limitations are well known in the art as evidenced by Jackson'648. In particular, Jackson'648 discloses that the Interpacket gap includes at least one non-Idle symbol such that the presence of the non-Idle symbol is part of a message **(See Figure 2, element 43 and Column 4, Lines 24-34. Note that the limitation requiring that the non-idle symbol be part of a message is vague as the message is not defined in the claim. Certainly Jackson'648's non-idle symbol is part of the control data message and the IFG or IPG irrespective of whether there is protocol compliancy or not which is not claimed. Certainly the idle symbol in Jackson'648's system is based on Ethernet standards as shown in Column 5, Lines 40-45)**.

In view of the above, having the system of Bordogna'648 and then given the well established teaching of Jackson'648, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Bordogna'648 as taught by Jackson'648, since Jackson'648 clearly states in Column 1, Lines 30-35 that such a technique optimizes effective bandwidth of normal communication data while providing reliable in-band signaling.

6. Regarding **claim 2**, Bordogna'648 discloses a system wherein the system comprises Fast Ethernet **(See Paragraphs 4 and 5 discussing Bordogna'648 system being compliant to all forms Ethernet standards)**.

7. Regarding **claim 5**, Bordogna'648 discloses a system wherein the system comprises Gigabit Ethernet **(See Paragraphs 4 and 5 discussing Bordogna'648 system being compliant to all forms Ethernet standards)**.

8. Regarding **claim 7**, Bordogna'648 fails to disclose a process wherein the message comprises a side channel.

However, the above mentioned claimed limitations are well known in the art as evidenced by Jackson'648. In particular, Jackson'648 discloses a process wherein the message comprises a side channel **(See Figure 2, element 43 and Column 4, Lines 24-34. The IFG and idle period is used as a side channel)**.

In view of the above, having the system of Bordogna'648 and then given the well established teaching of Jackson'648, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Bordogna'648 as taught by Jackson'648, since Jackson'648 clearly states in Column 1, Lines 30-35 that such a technique optimizes effective bandwidth of normal communication data while providing reliable in-band signaling.

9. **Claims 3 and 4**, are rejected under 35 U.S.C. 103(a) as being unpatentable over Bordogna'648 in view of Jackson'648 as applied to claim 2 above, and further in view of Shin et al (US Pub. No. 2003/0227947).

10A. Regarding **Claim 3**, the combination of Bordogna'648 and Jackson'648 fails to disclose a process wherein the non-idle symbol in the inter-packet gap is the symbol for zero and has only one zero bit.

However, the above mentioned claimed limitations are well known in the art as evidenced by Shin'947. Shin'947 discloses a process wherein the non-idle symbol in the inter-packet gap is the symbol for zero and has only one zero bit (**See Paragraphs 140 and 166 – Null symbol is used for control**).

In view of the above, having the system of the combination of Bordogna'648 and Jackson'648 and then given the well established teaching of Shin'947, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of the combination of Bordogna'648 and Jackson'648 as taught by Shin'947 in order to comply to IEEE 802.3 standard for inter-packet gap while being able to send message using side channel or out-of-band signaling.

10B. Regarding **claim 4**, it is noted that the limitations of claim 4 corresponds to that of claim 3 as discussed above, please see the Examiner's comments with respect to claim 3 as set forth in the rejection above.

11. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Bordogna'648 in view of Jackson'648 as applied to claim 5 above, and further in view of Song et al (US 2003/0137975 A1).

12. Regarding **Claim 6**, the combination of Bordogna'648 and Jackson'648 fails to disclose a process wherein the non-Idle symbol comprises a K28.5/Dxx.y or K28.1/Dxx.y sequence.

However, the above mentioned claimed limitations are well known in the art as evidenced by Song'975. Song'975 discloses a process wherein the non-Idle symbol comprises a K28.5/Dxx.y or K28.1/Dxx.y sequence **(Song'975 in Paragraph 70 discloses a non-idle symbol comprising a K28.5/Dxx.y or K28.1/Dxx.y sequence).**

In view of the above, having the process based on the system of the combination of Bordogna'648 and Jackson'648 and then given the well established teaching of Song'975, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the process based on the system of the combination of Bordogna'648 and Jackson'648 as taught by Song'975 in order to comply to ANSI T11 standard for inter-frame gap while being able to send message using side channel or out-of-band signaling.

13. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Bordogna'648 in view of Trachewsky (US Pub. No. 2003/0206559).

14. Regarding **claim 8**, Bordogna'648 teaches a process for transmission of a message in a system, the process comprising the steps of sending, receiving, or propagating 1) more than one packet **(See Figure 2 showing a series packets with interpacket gaps)** and 2) an Interpacket gap **(Figure 2, elements 220-1...220-N).**

Bordogna'648 fails to disclose a process for transmitting messages in a system, wherein the packet comprising an information carrying portion between a start of a packet delimiter and an end of a packet delimiter, the information carrying portion including at least 16 information bytes encoded in standard symbols and at least one

non-standard symbol, wherein the standard symbols are defined according to a packet transmission standard.

However, the above mentioned claimed limitations are well known in the art as evidenced by Trachewsky'559. Trachewsky'559 discloses a process for transmitting messages in a system, wherein the packet comprising an information carrying portion between a start of a packet delimiter and an end of a packet delimiter (**Trachewsky'559 shows in Figure 6 an Ethernet packet/frame. In paragraph 132 Trachewsky'559 details that it is compliant to IEEE Std. 802.3 and in paragraph 111 and in Figure 2 it shows SOF (Start of a Frame) and EOF (End of Frame)), the information carrying portion including at least 16 information bytes encoded in standard symbols (Trachewsky'559's Figure 6 element 642 shows the information data encoded as 35 symbols (data) in Figure 19. See also paragraphs 30 and last portion of Paragraph 149)** is the information carrying portion encoded in symbols and at least one non-standard symbol (**Based on Applicant's use of non-standard symbol in the published specification it means symbols defined by the Standard and not used. Given this definition the protocol is not violated if the payload carries any defined unused symbol**), wherein the standard symbols are defined according to a packet transmission standard (**Trachewsky'559 shows in paragraphs 146, 158 and 181 that the encoding has to be compliant to various packet transmission standard**).

In view of the above, having the process based on the system of Bordogna'648 and then given the well established teaching of Trachewsky'559, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to

modify the process based on the system of Bordogna'648 as taught by Trachewsky'559 in order to facilitate communication between different frame based networks as pointed in Trachewsky'559's paragraph 10.

15. **Claims 9, 10, and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bordogna'648 in view of Trachewsky'559 as applied to claim 8 above, and further in view of Leroux et al (US Pub. No. 2003/0235214).

16. Regarding **claim 9**, the combination of Bordogna'648 and Trachewsky'559 fails to disclose a process wherein the inter-packet gap includes both at least one symbol decoded as an idle symbol and at least one non-idle symbol such that the presence of the non-idle symbol is part of a message.

However, the above mentioned claimed limitations are well known in the art as evidenced by Leroux'214. Leroux'214 discloses a process wherein the inter-packet gap includes both at least one symbol decoded as an idle symbol and at least one non-idle symbol such that the presence of the non-idle symbol is part of a message (**See Figures 1 and 2 and paragraphs 13-15. Note that the limitation requiring that the non-idle symbol be part of a message is vague as the message is not defined in the claim. Certainly Jackson'648's non-idle symbol is part of the control data message and the IFG or IPG irrespective of whether there is protocol compliancy or not which is not claimed.**).

In view of the above, having the process based on the system of the combination of Bordogna'648 and Trachewsky'559 and then given the well established teaching of Leroux'214, it would have been obvious to one having ordinary skill in the art at the time

of the invention was made to modify the process based on the system of the combination of Bordogna'648 and Trachewsky'559 as taught by Leroux'214 in paragraph 14 to provide a scheme for a reliable in-band signaling.

17. Regarding **claim 10**, Bordogna'648 discloses a system wherein the system comprises Fast Ethernet **(See Paragraphs 4 and 5 discussing Bordogna'648 system being compliant to all forms Ethernet standards)**.

18. Regarding **claim 13**, Bordogna'648 discloses a system wherein the system comprises Gigabit Ethernet **(See Paragraphs 4 and 5 discussing Bordogna'648 system being compliant to all forms Ethernet standards)**.

19. **Claims 11 and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bordogna'648 in view of Trachewsky'559 and Leroux'214 as applied to claim 10 above, and further in view of Shin'947.

20A. Regarding **Claim 11**, the combination of Bordogna'648, Trachewsky'559, and Leroux'214 fails to disclose a process wherein the non-idle symbol in the inter-packet gap is the symbol for zero and has only one zero bit.

However, the above mentioned claimed limitations are well known in the art as evidenced by Shin'947. Shin'947 discloses a process wherein the non-idle symbol in the inter-packet gap is the symbol for zero and has only one zero bit. **(See Paragraphs 140 and 166 – Null symbol is used for control)**

In view of the above, having the system of the combination of Bordogna'648, Trachewsky'559, and Leroux'214 and then given the well established teaching of Shin'947, it would have been obvious to one having ordinary skill in the art at the time of

the invention was made to modify the system of the combination of Bordogna'648, Trachewsky'559, and Leroux'214 as taught by Shin'947 in order to comply to IEEE 802.3 standard for inter-packet gap while being able to send message using side channel or out-of-band signaling.

20B. Regarding **claim 12**, it is noted that the limitations of claim 12 corresponds to that of claim 11 as discussed above, please see the Examiner's comments with respect to claim 11 as set forth in the rejection above.

21. **Claim 14** is rejected under 35 U.S.C. 103(a) as being unpatentable over Bordogna'648 in view of Trachewsky'559 and Leroux'214 as applied to claim 13 above, and further in view of Song'975.

22. Regarding **Claim 14**, the combination of Bordogna'648, Trachewsky'559, and Leroux'214 fails to disclose a process wherein the non-Idle symbol comprises a K28.5/Dxx.y or K28.1/Dxx.y sequence.

However, the above mentioned claimed limitations are well known in the art as evidenced by Song'975. Song'975 discloses a process wherein the non-Idle symbol comprises a K28.5/Dxx.y or K28.1/Dxx.y sequence (**Song'975 in Paragraph 70 discloses a non-idle symbol comprising a K28.5/Dxx.y or K28.1/Dxx.y sequence**).

In view of the above, having the process based on the system of the combination of Bordogna'648, Trachewsky'559, and Leroux'214 and then given the well established teaching of Song'975, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the process based on the system of the combination of Bordogna'648, Trachewsky'559, and Leroux'214 as taught by Song'975

in order to comply to ANSI T11 standard for inter-frame gap while being able to send message using side channel or out-of-band signaling.

23. **Claim 21** is rejected under 35 U.S.C. 103(a) as being unpatentable over Shin'947 in view of Jackson'648.

24. Regarding **claim 21**, Shin teaches an apparatus (**Figure 2**), comprising: a transmitter (**Figure 2, 231**) configured to transmit a signal having a plurality of packets and an interpacket gap (**Paragraph 106 in relation to Figure 9C**), the interpacket gap having symbols decoded as an Idle symbol (**As illustrated in Paragraph 87 it is clear that an control symbol can be used as an idle symbol and be inserted in between the interpacket gap**), the transmitter including: a buffer configured to store a message to be inserted into the interpacket gap (**Figure 2, 223 and 222 has to have a buffering capability as illustrated in paragraphs 80 and 82**); a formatter configured to modify a bit stream representing the message to allow identification of message boundaries and to allow establishment of word alignment within the bit stream (**Figure 2, 212, packetizer is effectively a formatter as indicated in paragraph 79**); and an encoder (**Figure 2, 221 and 222 and also see paragraph 80**) configured to substitute at least one message symbol for one of the symbols decoded as an Idle symbol in the interpacket gap to encode at least a portion of the message into the interpacket gap, wherein the at least one message symbol is decoded as an Idle symbol. (**See in general paragraph 106 in relation with Figure 9C, paragraph 98 in relation with Figure 9A, paragraphs 80, 82, 87, 90**)

Shin fails to expressly disclose that the idle symbols are replaced by non-idle symbols in the interpacket gap and the Idle symbol is defined according to an Ethernet standard.

However, the above mentioned claimed limitations are well known in the art as evidenced by Jackson'648. Jackson'648 discloses an apparatus wherein the idle symbols are replaced by non-idle symbols in the interpacket gap and the Idle symbol is defined according to an Ethernet standard **(See Figure 2, element 43 and Column 4, Lines 24-34. Certainly Jackson'648's non-idle symbol is part of the control data message and the IFG or IPG and replaces the idle symbol. Certainly the idle symbol in Jackson'648's system is based on Ethernet standards as shown in Column 5, Lines 40-45).**

In view of the above, having the system of Shin'947 and then given the well established teaching of Jackson'648, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Shin'947 as taught by Jackson'648, since Jackson'648 clearly states in Column 1, Lines 30-35 that such a technique optimizes effective bandwidth of normal communication data while providing reliable in-band signaling.

25. **Claims 22-26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shin'947 in view of Jackson'648 as applied to claim 21 above, and further in view of Thi et al (US Pub. No. 2002/0061012 A1).

26. Regarding **claim 22**, the combination of Shin'947 and Jackson'648 fails to disclose an apparatus wherein the formatter is configured to modify the bit stream with an HDLC flag.

However, the above mentioned claimed limitations are well known in the art as evidenced by Thi'012. Thi'012 discloses an apparatus wherein the formatter is configured to modify the bit stream with an HDLC flag **(See Paragraphs 434 and 435)**.

In view of the above, having the apparatus based on the combination of Shin'947 and Jackson'648 and then given the well established teaching of Thi'012, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the apparatus based on the combination of Shin'947 and Jackson'648 as taught by Thi'012, since Thi'012 clearly states in paragraph 434 that such a technique of using HDLC flag allows incorporation of new services such as fax.

27. Regarding **claim 23**, the combination of Shin'947, Jackson'648 and Thi'012 discloses an apparatus wherein the formatter is configured to insert a logic zero to the bit stream to avoid recognition of a portion of the message as the flag. **(See Shin'947 Figure 21A)**

28 Regarding **claim 24**, the combination of Shin'947, Jackson'648 and Thi'012 discloses an apparatus wherein the Ethernet standard is IEEE 802.3I. **(See Jackson'648 Column 5, Lines 37)**

29. Regarding **claim 25**, the combination of Shin'947, Jackson'648 and Thi'012 discloses an apparatus wherein at least one message symbol substituted by the encoder represents logic 1. **(See Shin'947 Figures 20 and 21A)**

30. Regarding **claim 26**, the combination of Shin'947, Jackson'648 and Thi'012 discloses an apparatus wherein at least one message symbol substituted by the encoder represents logic 0. **(See Shin Figures 20 and 21A)**

Response to Arguments

1. Applicant's arguments with respect to independent claims 1, 8, and 21 have been considered but are moot in view of the new ground(s) of rejection.
2. Examiner has reviewed all of the arguments presented by the Applicant and wants to emphasize several points that need to be clarified that may help in expediting the prosecution of the Application.
3. First, in the Remarks, on pages 5 and 6 Applicant points out that the limitation reciting "an interpacket gap includes at least one non-idle symbol such that the presence of the non-idle symbol is part of a message" found in claims 1 and 21 is not addressed by the previously cited prior arts. However, Examiner wants to emphasize to the Applicant that the message is not defined precisely in the claims because any reference teaching the interpacket gap can be seen as a message or a message segment. What may distinguish the Applicant's invention is that the interpacket gap is a message based on a packet transmission standard and replacing the idle symbols of the standard defined message (i.e. interpacket gap) with non-idle symbols results in a modified interpacket gap that is still compliant to the packet transmission standard. The current amended limitations simply require standard based idle symbols and the cited prior arts teach these limitations.

4. Second the limitations in the independent claims do not explicitly require the non-idle symbols to be based on the packet transmission standards. Hence any prior art that replaces the idle symbols with “any encoded symbol different from the idle symbols and not based on any pertinent packet transmission standard” will read on these limitations. It is also not clear to the Examiner that the Applicant specification teaches using a non-idle symbol not based on the packet transmission standards as paragraph 32 of the published specification suggests using unused but standard defined symbols as non-idle symbols.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HABTE MERED whose telephone number is (571)272-6046. The examiner can normally be reached on Monday to Friday 9:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung S. Moe can be reached on 571 272 7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2616

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aung S. Moe/
Supervisory Patent Examiner, Art Unit 2616

/Habte Mered/
Examiner, Art Unit 2616